CHAPTER 5.0
IMPACTS DETERMINED TO BE LESS THAN SIGNIFICANT

This section summarizes those potential impacts of the proposed Coto de Caza Specific Plan Amendment project that were determined not to be significant or which could be mitigated to below a level of significance based on analysis and/or mitigation measures incorporated in the proposed project.

5.1 Agriculture

Project implementation will not result in the conversion of any prime or otherwise significant farmland. No agricultural use of the property presently occurs. Although the subject property was used historically for agriculture, primarily livestock ranching, it is currently vacant. According to the Orange County Important Farmland Map, the entire area, including the subject property, is designated as "Other Land" which encompasses land ". . . that does not meet the criteria of any other category." As a result, no portion of the project site encompasses prime farmland, farmland of statewide importance, or unique farmland. Development of the site as proposed will not result in any significant impacts to farmland or other important agricultural resources.

The subject property is not zoned for agricultural uses nor included in a Williamson Act contract. Project implementation will not require changes either to the existing zoning classifications nor General Plan Land Use Element land use designations. Therefore, no conflicts are anticipated to occur to existing agricultural uses as a result of project implementation.

5.2 Air Quality

Project implementation will allow for the development of a 126.51-acre site within the Coto de Caza Specific Plan area with seven (7) single-family residential dwelling units on lots that range from approximately 2 acres to 9.24 acres in size on 28.3 acres (including the streets). Landform alteration entails grading approximately 5,000 cubic yards of earth materials that would result in some temporary construction emissions associated with the use of construction equipment and the movement of the dirt within the subject property. Long-term emissions would occur in the form of vehicular emissions and stationary source emissions associated with the consumption of natural gas and electricity. The project-related short- and long-term emissions are summarized below.

Short-Term Construction Emissions

Dust is typically the primary concern during construction of new buildings and infrastructure. Because such emissions are not amenable to collection and discharge through a controlled source, they are called "fugitive emissions." Emission rates vary as a function of many parameters (soil silt, soil moisture, wind speed, area disturbed, number of vehicles, depth of disturbance or excavation, etc.). These parameters are not known with any reasonable certainty prior to project development and may change from day to day. Any assignment of specific parameters to an unknown future date is speculative and conjectural.

Because of the inherent uncertainty in the predictive factors for estimating fugitive dust generation, regulatory agencies typically use one universal "default" factor based on the area disturbed assuming that all other input parameters into emission rate prediction fall into midrange average values. This assumption may or may not be totally applicable to site-specific conditions on the proposed project site. As noted previously, emissions estimation for project-specific fugitive dust sources is therefore characterized by a considerable degree of imprecision.

Average daily PM_{10} emissions during site grading and other disturbance are stated in the SCAQMD Handbook to be 26.4 pounds/acre. This estimate is based upon required dust control measures in effect in 1993 when the AQMD CEQA Air Quality Handbook was prepared. Rule 403 was subsequently strengthened to require use of a greater array of fugitive dust control on construction projects. All construction projects in the SCAQMD are required to use strongly enhanced control procedures. Use of enhanced dust control procedures such as continual soil wetting, use of supplemental binders, early paving, etc. can achieve a substantially higher PM_{10} control efficiency. Daily emissions with use of reasonably available control measures (RACMs) for PM_10 can reduce emission levels to around ten (10) pounds per acre per day. With the use of best available control measures (BACMs) the California Air Resources Board URBEMIS2007 computer model predicts that emissions can be reduced to 1-2 pounds per acre per day. Because of the PM_{10} non-attainment status of the air basin, construction activity dust emissions are considered to have a cumulatively significant impact. Use of BACMs is thus required even if SCAQMD individual CEQA thresholds are not exceeded by use of RACMs.

Current research in particulate-exposure health suggests that the most adverse effects derive from ultra-small diameter particulate matter comprised of chemically reactive pollutants such as sulfates, nitrates or organic material. A national clean air standard for particulate matter of 2.5 microns or smaller in diameter (called "$PM_{2.5}$") was adopted in 1997. A limited amount of construction activity particulate matter is in the $PM_{2.5}$ range. $PM_{2.5}$ emissions are estimated by the SCAQMD to comprise 20.8 percent of PM_{10}. Other studies have shown that the fugitive dust fraction of $PM_{2.5}$ is closer to 10 percent. Daily $PM_{2.5}$ emissions during construction with the use of BACMs will be less than 1 pound per day compared to the SCAQMD CEQA significance threshold of 55 pounds per day.

In addition to fine particles that remain suspended in the atmosphere semi-indefinitely, construction activities generate many larger particles with shorter atmospheric residence times. This dust is comprised mainly of large diameter inert silicates that are chemically non-reactive and are further readily filtered out by human breathing passages. These fugitive dust particles are therefore more of a potential soiling nuisance as they settle out on parked cars, outdoor furniture or landscape foliage rather than any adverse health hazard. The deposition distance of most soiling nuisance particulates is less than 100 feet from the source (EPA, 1995). There are no sensitive receptors within 100 feet from the primary construction site.

Exhaust emissions will result from on and off-site heavy equipment. The types and numbers of equipment will vary among contractors such that such emissions cannot be quantified with certainty. Initial excavation will gradually shift toward pipe installation and then for paving, landscaping, etc. The URBEMIS2007 computer model was used to calculate emissions from the prototype construction equipment fleet identified in Table 5.2-1.

Table 5.2-1

Urbemis2007 Equipment Fleet Mix
Coto de Caza Specific Plan Amendment

Construction Phase	Equipment Mix
Grading	1 Grader 1 Dozer 2 Tractor/Loader/Backhoe 1 Water Truck
Paving	4 Cement Mixers 1 Paver 1 Roller 2 Paving Equipment
Construction	1 Small Crane 3 Welders 1 Generator Set 2 Forklifts 1 Tractor/Loader/Backhoe

Utilizing the equipment fleet identified in Table 5.2-1 and an estimated 5,000 cubic yards of on-site earthworks, the construction emissions associated with the proposed project are summarized in Table 5.2-2.

Table 5.2-2

Construction Activity Emissions
Coto de Caza Specific Plan Amendment

Construction Activity	ROG (lbs/day)	NOx (lbs/day)	CO (lbs/day)	SO_2 (lbs/day)	PM_{10} (lbs/day)	$PM_{2.5}$ (lbs/day)	CO_2 (lbs/day)
Grading							
No Mitigation	4.2	33.7	18.7	0.0	92.2	1.7	3,163.0
With Mitigation	4.2	28.7	18.7	0.0	9.9	2.3	3,163.0
Construction, Paving and Coating							
No Mitigation	6.6	30.6	22.1	0.0	2.4	2.2	3,234.1
With Mitigation	6.6	26.1	22.1	0.0	0.4	0.4	3,234.1
SCAQMD Threshold	55	55	550	150	150	55	--
Exceeds Threshold	No	No	No	No	No	No	--
SOURCE: Giroux & Associates							

As indicated above, construction activity air emissions occurring during the construction phase will not exceed the significance thresholds established by the South Coast AQMD.

The SCAQMD has also developed analysis parameters to evaluate ambient air quality on a local level in addition to the more regional emissions-based thresholds of significance. These analysis elements are called Local Significance Thresholds (LSTs). LSTs were developed in response to Governing Board's Environmental Justice Enhancement Initiative 1-4 and the LST methodology was provisionally adopted in October 2003 and formally approved by SCAQMD's Mobile Source Committee in February 2005.

Use of an LST analysis for a project is optional. For infrastructure improvement projects, the only source of LST impact would be during construction. LSTs are only applicable to the following criteria pollutants: oxides of nitrogen (NOx), carbon monoxide (CO), and particulate matter (PM_{10} and $PM_{2.5}$). LSTs represent the maximum emissions from a project that are not expected to cause or measurably worsen an exceedance of the most stringent applicable federal or state ambient air quality standard, and are developed based on the ambient concentrations of that pollutant for each source receptor area and distance to the nearest sensitive receptor.

LST pollutant concentration data is currently published for 1-, 2-, and 5-acre sites. The URBEMIS2007 model predicts that less than 1-acre per day could be disturbed by construction activities for the proposed project. Utilizing data for a one-acre site and a source receptor distance of 25 meters, the LST thresholds (pounds per day) were estimated and are reflected in Table 5.2-3. As indicated in the table, when mitigated through the compliance with dust suppression and related requirements, all of the emissions will remain below the LST thresholds. Therefore, air quality impacts will be less than significant.

Table 5.2-3

Local Significance Thresholds
Coto de Caza Specific Plan Amendment

Central Orange County	CO (lbs/day)	NOx (lbs/day)	PM_{10} (lbs/day	$PM_{2.5}$ (lbs/day)
LST Threshold	4,387	222	74	30
Proposed Project				
Maximum Unmitigated Emissions	22	33	92	21
Maximum Mitigated Emissions	19	28	10	2
SOURCE: Giroux & Associates				

As indicated in Table 5.2-3, all mitigated emissions are below LST thresholds for construction. Since the LST emissions threshold is not exceeded for even a 5-acre site, a 7-acre disturbance footprint with a higher triggering threshold would create an even larger margin of safety.

Long-Term Operational Emissions

Due to the nature of the project and the standard operating procedures of the County, ambient air quality would not deteriorate beyond the levels projected by the South Coast AQMD. As a part of the standard procedures contained in the plans and specifications and enforced by the County, construction inspectors would require the following standard operating conditions.

SC-5.2-1 Confirm that, in compliance with SCAQMD Rule 403, fugitive dust shall be controlled through the use of a watering truck as necessary, and/or the use of an environmentally safe chemical dust suppressant. Controls shall be applied to all on-site, unpaved roads and ramps, stockpile areas, actively excavated or exposed sites, and all areas that may be temporarily inactive but include exposed (i.e., denuded or devoid of vegetation) or disturbed surfaces.

SC-5.2-2 Confirm compliance with South Coast AQMD Rule 403 as follows:

- Moisten soil and debris not more than 15 minutes prior to excavation or movement.
- Apply environmentally safe chemical stabilizers to disturbed surface areas (i.e., graded areas or areas subject to erosion from wind or water) within five days of completing grading or apply dust suppressants or vegetation sufficient to maintain a stabilized surface.
- Water exposed surface areas at least twice a day under calm conditions or as often as needed on windy days or during dry weather in order to maintain a surface crust and prevent the release of visual emissions of dust from the construction site.
- Cease grading operations when wind speeds exceed 25 miles per hour if dust is being generated and cannot be controlled by watering alone.
- Provide street sweeping, as needed, on adjacent roadways to remove dirt, mud and/or debris dropped from construction vehicles entering or leaving the project site.
- Maintain a minimum of two feet of freeboard capacity on all trucks hauling dirt, debris and/or construction materials to and from the construction site.
- All trucks hauling dirt, debris and/or construction materials to and from the project site shall be tightly covered with a tarp.
- Mobile heavy equipment (e.g., bull dozers, haul trucks, etc.) on unpaved surfaces shall be limited to an on-site speed that avoids fugitive dust impacts off-site as determined by the County Project Engineer.

Incorporation of these measures, as determined applicable to the specific nature of the construction activities, will ensure that the fugitive dust generation will be less than significant.

Long-Term Operational Emissions

Possible project-related air quality concern will derive from the mobile source emissions that will be generated from the residential uses for the project site. Operational emissions for project-related traffic were calculated using a computerized procedure developed by the California Air Resources Board (CARB) for urban growth mobile source emissions. The URBEMIS2007 model was run using the default I.T.E trip generation factors for a 7-unit single-family residential development. The model was used to calculate area source emissions and the resulting vehicular operational emissions for an assumed project build-out year of 2011. The results are shown in Table 5.2-4.

Table 5.2-4

Project-Related Operational Emissions (lbs/day)
Coto de Caza Specific Plan Amendment

Source	ROG	NOx	CO	SO_2	PM_{10}	$PM_{2.5}$	CO_2
Year 2011							
Area Sources	0.5	0.1	0.4	0.0	0.0	0.0	146.1
Mobile Sources	0.6	0.7	7.6	0.0	1.4	0.3	824.2
Total	1.1	0.8	8.0	0.0	1.4	0.3	970.3
SCAQMD Threshold	55	55	550	150	150	55	--

In addition to mobile sources from vehicles, general development causes smaller amounts of "area source" air pollution to be generated from on-site energy consumption (natural gas combustion) and from off-site electrical generation. These sources represent a small percentage of the total project NOx and CO burdens, and a few percent other pollutants. The inclusion of such emissions adds negligibly to the total significant project-related emissions burden as shown in Table 5.2-4.

The project will not cause the SCAQMD's recommended threshold levels to be exceeded. Operational emissions impacts will be less than significant. No mitigation measures are required.

5.3 Cultural Resources

Archaeological Resources

Final EIR 401 contains a thorough assessment of the potential impacts to archaeological and paleontological resources. As indicated in the analysis contained in that document, several investigations of the Coto de Caza area have been surveyed prior to 1981. Based on those surveys, 11 Type I (i.e., campsite and/or village sites defined by the presence of a large variety of artifactual types). In addition, 10 Type II (i.e., specific food procurement or processing activities characterized by a limited duration of occupation) archaeological resources were also identified in the Coto de Caza area. In addition, several Type III (i.e., one or two artifacts not associated with other more specifically located cultural materials) and four Type IV (i.e., unusual circumstances made an evaluation of their nature difficult) sites were identified. None of the archaeological sites previously identified are located on the subject property. Subsequently, a records search conducted by Christopher Drover, Ph.D., R.P.A., concluded that " . . . the subject property had been previously investigated; however, no cultural resources had been previously recognized for the immediate subject development area."[1] The nearest cultural resources to the subject property are Ora-995 and Ora-171, which are located approximately one-half mile to the south and one-half mile to the north, respectively.

Although project implementation will result in some grading and landform alteration in order to create building pads for the seven lots, significant impacts to cultural resources are not anticipated. Several mitigation measures were identified in EIR 401 to address potential impacts to cultural resources, including grading observation pursuant to the County's standard conditions. Therefore, because the subject property is located in an area of the County where cultural resources have been identified, the proposed project will be subject to the observation by a qualified archaeologist, as indicated below. Therefore, no significant impacts to cultural resources are anticipated and no mitigation measures are required.

[1]Christopher Drover, Ph.D., R.P.A.; letter dated March 26, 2010.

SC-5.3-1 Prior to the issuance of the grading permit, the plans and specifications shall stipulate that if evidence of subsurface archaeological resources is found during construction, excavation and other construction activity in that area shall cease and the contractor shall contact the Construction Engineer, who will then contact a county certified archaeologist to determine the extent of the find and take proper actions.

Paleontological Resources

In addition to the cultural resources assessments conducted on the Coto de Caza property, similar surveys were also conducted to determine the presence of paleontological resources within the same area. The surveys concluded that although no paleontological resource were noted at the surface, the characteristics of the sedimentary rock units on-site demonstrate a potential for such resources because the underlying geological formations have yielded fossils in other areas of the County of Orange and southern California. As a result, Final EIR 401 also required monitoring during grading, which would also be required for the proposed project in accordance with the County's standard condition for paleontological monitoring as prescribed below. This requirement has been confirmed by Christopher Drover, Ph.D., R.P.A. in the most recent review of the site.[2]

SC-5.3-2 Prior to the issuance of the grading permit, the plans and specifications shall stipulate that if evidence of subsurface paleontological resources are found during construction, excavation and other construction activity in that area shall cease and the contractor shall contact the Construction Engineer, who will then contact a county certified paleontologist to determine the extent of the find and take proper actions.

Historical Resources

The site is devoid of any structures or other features that are historically important. Therefore, grading and landform alteration necessary to accommodate seven single-family residential structures as well as that required for the proposed access road, fuel modification plan, and related features would not result in any impacts to existing historical resources. No mitigation measures are required.

5.4 Climate Change/Greenhouse Gas

"Greenhouse gases" (so called because of their role in trapping heat near the surface of the earth) emitted by human activity are implicated in global climate change, commonly referred to as "global warming." These greenhouse gases contribute to an increase in the temperature of the earth's atmosphere by transparency to short wavelength visible sunlight, but near opacity to outgoing terrestrial long wavelength heat radiation. The principal greenhouse gases (GHGs) are carbon dioxide, methane, nitrous oxide, ozone, and water vapor. Fossil fuel consumption in the transportation sector (on-road motor vehicles, off-highway mobile sources, and aircraft) is the single largest source of GHG emissions, accounting for approximately half of GHG emissions globally. Industrial and commercial sources are the second largest contributors of GHG emissions with about one-fourth of total emissions.

California has passed several bills and the Governor has signed at least three executive orders regarding greenhouse gases. The Governor's Office of Planning and Research is in the process of developing CEQA significance thresholds for GHG emissions but thresholds have yet to be established. GHG statues and executive orders (EO) include Statutes of 2006, Chapter 488 (AB 32); SB 1368; EO S-03-05; EO S-20-06; and EO S-01-07.

[2]Christopher Drover, Ph.D., R.P.A.; letter dated March 26, 2010

AB 32 is one of the most significant pieces of environmental legislation that California has adopted. Among other things, it is designed to maintain California's reputation as a "national and international leader on energy conservation and environmental stewardship." It will have wide-ranging effects on California businesses and lifestyles as well as far reaching effects on other states and countries. A unique aspect of AB 32, beyond its broad and wide-ranging mandatory provisions and dramatic GHG reductions are the short time frames within which it must be implemented. Major components of the AB 32 include:

- Require the monitoring and reporting of GHG emissions beginning with sources or categories of sources that contribute the most to statewide emissions.
- Requires immediate "early action" control programs on the most readily controlled GHG sources.
- Mandates that by 2020, California's GHG emissions be reduced to 1990 levels.
- Forces an overall reduction of GHG gases in California by 25-40%, from business as usual, over the next 13 years (by 2020).
- Must complement efforts to achieve and maintain federal and state ambient air quality standards and to reduce toxic air contaminants.

Statewide, the framework for developing the implementing regulations for AB 32 is under way. Additionally, through the California Climate Action Registry (CCAR now called the Climate Action Reserve), general and industry-specific protocols for assessing and reporting GHG emissions have been developed. GHG sources are categorized into direct sources (i.e. company owned) and indirect sources (i.e. not company owned). Direct sources include combustion emissions from on-and off-road mobile sources, and fugitive emissions. Indirect sources include off-site electricity generation and non-company owned mobile sources.

There are currently no adopted GHG significance thresholds for project CEQA clearance. The California Governor's Office of Planning and Research (OPR) has developed revisions to CEQA implementation guidelines to incorporate GHG. These were forwarded to the California National Resource Agency on April 13, 2009. They contain requirements to characterize the GHG setting, quantify the impacts resulting from the proposed project, determine impact significance, and mitigate as appropriate. They leave the determination of significance to the Lead Agency.

On December 5, 2008 the SCAQMD Governing Board adopted an Interim quantitative GHG Significance Threshold for industrial projects where the SCAQMD is the lead agency (e.g., stationary source permit projects, rules, plans, etc.) of 10,000 Metric Tons CO_2 equivalent/year. As part of the Interim GHG Significance Threshold development process for industrial projects, the SCAQMD established a working group of stakeholders that also considered thresholds for commercial or residential projects. As discussed in the Interim GHG Significance Threshold guidance document, the focus for residential projects is on performance standards and a screening level threshold. For discussion purposes, the SCAQMD's working group considered performance standards primarily focused on energy efficiency measures beyond Title 24 and a screening level of 3,000 metric tons (MT) CO_2 equivalent/year based on the relative GHG emissions contribution between non-industrial sectors versus stationary source (industrial) sectors. The working group and staff ultimately decided that additional analysis was needed to further define the performance standards and to coordinate with CARB staff's interim GHG proposal. Staff, therefore, did not recommend action for adopting an interim threshold for non-industrial projects but rather recommended bringing this item back to the Board for discussion and possible action in March 2009 if the CARB board did not take its final action by February 2009. As of this date, no final action on a quantitative significance threshold has been taken, but 3,000 MT per year has become a *de facto* screening threshold.

Short-Term GHG Construction Emissions

During project construction, the URBEMIS2007 computer model predicts that the indicated activities will generate the following annual CO_2 emissions:

2010 Grading	104 tons
2011 Construction, Paint and Pavement	343 tons

Equipment exhaust also contains small amounts of methane and nitric oxides, which are also GHGs. Non-CO_2 GHG emissions represent approximately a three percent increase in CO_2-equivalent (CO_2e) emissions from diesel equipment exhaust. For screening purposes, the temporary construction activity GHG emissions were compared to the chronic operational emissions in the SCAQMD's interim thresholds. The screening level operational threshold is 3,000 metric tons (MT) of CO_2e per year. Worst year construction activities generating a total of 343 MT are well below this threshold. Therefore, no significant project-related or cumulative impacts are anticipated.

Long-Term GHG Operational Emissions

The input assumptions for operational GHG emissions calculations, and the GHG conversion from consumption to annual regional $CO_2(e)$ emissions are summarized in Table 5.4-1.

Table 5.4-1

Annual Non-Transportation Consumption/Generation Rates
Coto de Caza Specific Plan Amendment

Land Use	Unit	Electricity (MWHr)	Natural Gas (10^6 cu.ft.)	Solid Waste (Tons)	Water (10^6 gallons)
Residential	DU	5.6	0.0481	0.73	0.073

Conversion to CO23 (Tons/year):
Electricity – MWHR x 0.364 tons/MWHR[1]
Natural Gas – 10^6 cubic feet x 54.6 tons/10^6 cubic feet[1]
Solid Waste – tons x 0.46 tons/ton[2]
Water – 10^6 (MG) ax 4.62 tons/MG[3]

[1]California Climate Action Registry
[2]Energy Information Administration; voluntary Reporting of GHG.
[3]Califronia Energy Commission; Integrated Energy Policy Report

Annual GHG emissions, from non-transportation sources associated with residential development are shown in Table 5.4-2. Annual project-related GHG emissions will be below the 3,000 MT/year screening threshold.

Table 5.4-2

Project-Related Non-Transportation GHG Emissions
Coto de Caza Specific Plan Amendment

Land Use	Unit	Electricity (MWHr)	Natural Gas (10^6 cu.ft.)	Solid Waste (Tons)	Water (10^6 gallons)
Conversion Factor	7 DUs	0.364	54.6	0.46	4.62
CO_2e tons/year		14.2	18.4	2.4	2.3

Conversion to CO23 (Tons/year):
Electricity – MWHR x 0.364 tons/MWHR[1]
Natural Gas – 10^6 cubic feet x 54.6 tons/10^6 cubic feet[1]
Solid Waste – tons x 0.46 tons/ton[2]
Water – 10^6 (MG) ax 4.62 tons/MG[3]

[1]California Climate Action Registry
[2]Energy Information Administration; voluntary Reporting of GHG.
[3]Califronia Energy Commission; Integrated Energy Policy Report

As indicated above, project-related non-transportation emissions are estimated to be 37.5 metric tons/year. Total transportation-related emissions (refer to Table 5.2-4) are estimated to be 145.6 metric tons/year (80 percent of the total), resulting in a total combined CO_2e emissions figure of 183 metric tons/year, which is only six percent of the 3,000 metric tons/year screening threshold. Therefore, long-term GHG emissions are considered to be less than significant.

5.5 Hazardous and Hazardous Materials

The subject property is undeveloped. A search of the available environmental records, which was conducted by Environmental Data Resources, Inc. (EDR), resulted in a determination that no mapped sites were found and the subject property is not listed in any of the databases searched by EDR, including any lists of hazardous materials sites compiled pursuant to Government Code Section 65962.5.[3] Furthermore, no listed sites are located within one mile of the subject property.

Construction activities would involve the use of materials associated with the construction of seven single-family residential dwelling units, including oil, gas, tar, construction materials and adhesives, cleaning solvents and paint. Transport of these materials to the site and use on the site would only create a localized hazard in the event of an accident or spills. Hazardous materials use, transport, storage and handling would be subject to federal, state and local regulations to reduce the risk of accidents. Equipment maintenance and disposal of vehicular fluids is subject to existing regulations, including the National Pollutant Discharge Elimination System (NPDES). Given the nature of the project in terms of its limited scope and size, it is anticipated that normal storage, use and transport of hazardous materials will not result in undue risk to construction workers on the site or to persons on surrounding areas. The use and disposal of any hazardous materials on the site and in conjunction with the project will be in accordance with existing regulations. With the exception of small quantities of pesticides, fertilizers, cleaning solvents, paints, etc., that are typically used to maintain residential properties, on-going operation of the site for residential use will not result in the storage or use of hazardous materials.

[3]Environmental Data Resources, Inc.; The EDR Radius Map Report with GeoCheck (Coto de Caza Van Gogh Way, Trabuco Canyon, CA 92679); April 13, 2010.

Project implementation includes only the site preparation and construction of seven single-family residences on approximately 28.3 acres within the 126.51-acre site. As indicated above, the proposed project does not involve any activities and/or uses that would utilize hazardous materials or other substances, either during construction or following occupation of those units by future residents, that would, if released into the environment, create a safety or health hazard. There is no indication that the subject site has been contaminated that would adversely affect site development based on the environmental records search conducted by EDR. Although grading and site preparation activities will expose subsurface soils and result in the generation of fugitive dust, no hazardous emissions will occur as a result of project implementation. Therefore, no significant impacts will occur.

The project site is located approximately 15miles southwest of John Wayne Airport (JWA) and is not located within or subject to the airport land use plan for JWA or any other aviation facility. Operations at JWA will not pose a safety hazard for future residents due to the proximity of the project to the airport. Therefore, no significant impacts are anticipated and no mitigation measures are required.

5.6 Mineral Resources

Neither the Orange County General Plan nor the State of California has identified either the project site or environs as a potential location for mineral resources of Statewide, regional, or local significance. No mineral resources are known to exist. Therefore, development of the subject property as proposed will not result in the loss of any locally important mineral resource recovery site. No significant impacts will occur as a result of project implementation.

5.7 Noise

Short-Term (Construction) Noise

Typically, the estimated construction noise levels are governed primarily by the piece of equipment that produces the highest noise levels. The character of the noise levels surrounding the construction site will change as work progresses, depending on the noise levels of the loudest piece of construction equipment in use. A combination of construction vehicles, power tools, and handheld tools would be used depending on the construction phase. Construction noise levels are based on those reported by the Federal Highway Administration (FHWA) using the Roadway Construction Noise Model (RCNM version 1.1, 2008). Noise levels for construction equipment from the RCNM are identified below, which indicated that typical noise levels range up to 83.3 dBA L_{eq} at 50 feet from the source during the noisiest construction phases. The site preparation phase, which includes excavation and grading of the site and concrete pouring tends to generate the highest noise levels, because the noisiest construction equipment is typically associated with these activities. Most importantly, all of the significant noise-generating construction activities are limited to the normal working hours by the Noise Ordinance, which minimizes the effect of those activities.

Table 5.7-1

Typical Construction Equipment Noise Levels
Coto de Caza Specific Plan Amendment

Type of Equipment	Average Sound Levels (dBA L_{eq} at 50 feet)
Backhoe	73.6
Concrete Mixer Truck	74.8
Concrete Pump Truck	74.4
Excavator	76.7
Front End Loader	75.1
Jackhammer	81.7
Drill Rig Truck	72.2
Hydra Break Ram	80.0
Tractor	80.0
Vibratory Concrete Mixer	73.0
Flat Bed Truck	70.3
Auger Drill Rig	77.4
Mounted Impact Hammer (Hoe Ram)	83.3
Dozer	77.7
SOURCE: Roadway Construction Noise Model (version 1.1)	

Short-term (construction) noise level increases will occur from the use of construction equipment associated with grading and excavation and building and construction activities. Earthmoving equipment includes excavating machinery such as backhoes, bulldozers, and front loaders. Potential noise impacts vary markedly because the noise strength of construction equipment ranges widely as a function of the equipment used and its activity level. The exposure of residents in the vicinity of the project site to the periodic increase in noise levels will be short-term and will cease after construction is completed. Short-term construction noise impacts tend to occur in discrete phases dominated initially by earthmoving sources, then by foundation construction, and, finally, for building construction. Heavy equipment noise can average about 80 dB(A) at 50 feet from the source when the equipment is operating at typical loads. With the exception of the grading and construction of the access road that is proposed to extend from Van Gogh Way, the nearest existing residents are located approximately 600 feet from the proposed development area. It is important to note that noise levels decrease by 6 dBA for each doubling of distance (e.g., 80 dBA at 50 feet from the source would decrease to 74 dBA at 150 feet). Therefore, with the exception of the noise associated with the grading and construction of the access road, most construction noise levels would be less than 60 dBA in the vicinity of the existing residential dwelling units based on the distance of the development area to the existing residential development.

A variety of noise sources and noise levels would occur on and in the immediate vicinity of the project site over the site preparation and construction phase anticipated for the proposed project. Noise levels would vary, depending upon the type and number of construction machinery and vehicles in use and their location within the project site. The types of machinery to be active will vary with the construction phases, which would include:

- Excavation
- Installation of foundations
- Building of structure
- Installation of plumbing, electrical, mechanical, finish exterior/interior, etc.
- Hardscape and landscape

It is important to note that all equipment is not generally operated continuously or used simultaneously. The number, type, distribution, and usage of construction equipment will differ from phase to phase. The noise generated is both temporary in nature and, as previously indicated, is limited in hours by the County's Noise Ordinance. Compliance with the existing noise control ordinance and hours of construction prescribed in the ordinance will minimize the potential noise impacts associated with project implementation. Other measures have been identified to ensure that construction noise is minimized. Typically, construction of single-family residential dwelling units on a small scale does not result in significant noise impacts because of their small size and the duration of construction is not anticipated to occur over a long period of time. Therefore, because the project encompasses only seven single-family residences, which would employ typical construction techniques and be constructed in approximately 12 months like most single-family residential construction, potential construction noise impacts will be less than significant with the incorporation of the prescribed mitigation measures.

Long-Term (Operational) Noise

Noise sources in the study area include traffic on the local streets in the vicinity of the project site and that associated with activities occurring within the nearby residential development. Ambient noise levels in the project area would be the same as other similar single-family residential neighborhoods in Coto de Caza. Residents of the proposed seven single-family residences, therefore, would not be exposed to significant long-term noise sources, either resulting from the increase in vehicular trips (estimated to be approximately 70 trips/day) or from on-site activities that would occur on the site. The proposed residences would be similar in nature as other single-family residences in the project vicinity. Although on-site noise levels associated with future residential activities (where none currently exist) would increase, it is anticipated that any such increase in long-term noise associated with the residential use would be those occurring as a result of outdoor activities and would be typical of noise levels in similar residential neighborhoods. If future residents and their guests should engage in activities that result in temporary, loud noise levels that exceed the limits set forth in the County's Noise Ordinance, the County is empowered to take actions to abate that activity. This project would not result in exposure of neighboring residents or future residents on site to noise levels that exceed City standards. Therefore, no significant long-term noise impacts are anticipated and no mitigation measures are required.

Aviation Noise

John Wayne Airport, the nearest aviation facility to the subject property, is located approximately 15 miles west of the subject property. The project site is not within an airport land use plan nor is the site within two miles of an airport. Noise in the vicinity of the project site associated with aircraft operations occurring at John Wane Airport is below 60 dBA CNEL and therefore, future residents will not be subjected to excessive noise levels resulting from flight operations.

Groundborne Vibration

Construction activities can generate varying degrees of ground vibration, depending on the construction procedures, construction equipment used, and proximity to vibration-sensitive uses. The effect of vibration on buildings near a construction site varies depending on the magnitude of vibration, geology, and receptor building construction. The generation of vibration can range from no perceptible effects at the lowest vibration levels, to low rumbling sounds and perceptible vibrations at moderate levels, to minor cosmetic damage at the highest levels. Ground vibrations from construction activities rarely reach levels that can damage structures, but can achieve the audible and perceptible ranges in buildings close to a construction site. It is anticipated that vibration levels generated by construction vehicles and during such activities as excavation may exceed the Federal Transportation Agency annoyance threshold (i.e., 78 VdB) for residential uses. However, the closest residential development is located approximately 600 feet from the proposed development area. Therefore, potential short-term impacts from vibration-induced

annoyance would not be expected to occur, even with the most intensive use of construction equipment. Any temporary annoyances occurring as a result of grading and construction of the access road will be less than significant and would cease upon completion of the grading/excavation required for the roadway. Project compliance with the County's standard condition during construction will ensure that no significant impacts will occur and no mitigation measures are required.

SC 5.7-1 Prior to the issuance of any grading permits, the project proponent shall produce evidence acceptable to the Manager, Permit Services, that:

- All construction vehicles or equipment, fixed or mobile, operated within 1,000 feet of a dwelling shall be equipped with properly operating and maintained mufflers.
- All operations shall comply with Orange County Codified Ordinance Division 6 (Noise Control).
- Stockpiling and/or vehicle staging areas shall be located as far as practicable from dwellings.

Notations in the above format, appropriately numbered and included with other notations on the front sheet of the project's permitted grading plans, will be considered as adequate evidence of compliance with this condition.

5.8 Population and Housing

The proposed project is consistent with the land uses approved for the Coto de Caza Planned Development applicable to the subject property. Development of the site with seven single-family residential dwelling units in accordance with the adopted long-range plans for the subject property would not result in significant growth and, furthermore, would not result in the potential for unanticipated growth because the project is located in an area that is virtually built out. As "in-fill" development, construction of the proposed project would not necessitate the implementation of new infrastructure such as major roadway improvements and/or the extension of infrastructure that could induce unanticipated growth and development. All of the infrastructure, including sewer and water facilities, storm drains, roadways, etc., exist in the immediate vicinity of the project site and can be extended to the subject property. These existing utility and service systems have adequate capacity to serve the proposed project (refer to Section 5.14). Furthermore, the addition of the seven residential dwelling units within PA 10 would increase the total number of dwelling units in that planning area to 195. Although up to 197 dwelling units are permitted in PA 10, it no future growth would be anticipated within the planning area because the remaining 100 acres of the subject property is dedicated to open space and/or habitat uses as prescribed in the proposed modification to the grant of easement for the subject property. Therefore, no significant growth-inducing impacts will occur as a result of project implementation.

5.9 Police Protection

Police protection and law enforcement services within Coto de Caza are provided by the Orange County Sheriff Department (OCSD). The OCSD provides 24-hour contract law enforcement services within unincorporated Orange County. Service provided includes staffing for calls for service, preventive patrol, traffic enforcement, general and traffic investigation, and specialized enforcement, which includes a Red Light Camera system deputy, school resource office, motor deputies, and a regional directed enforcement deputy. Sheriff's regional and departmental services also include homicide, sex, and economic crime

investigations. Special weapons and tactics (SWAT), Hostage Negotiations, and Reserve supplement, and many other services are also available to the City from OCSD. City, County, and State mutual aid agreements exist for a variety of situations.

Although there may be a minor incremental demand for police protection resulting from the proposed project (i.e., seven additional residential dwelling units), service is currently provided to the area and project implementation would not result in any potentially significant impacts on OCSD services. Nonetheless, in order to ensure that police protection services are not adversely affected, the applicant will comply with the conditions identified below.

SC 5.9-1 Prior to the issuance of a building permit, the project applicant shall submit the site plan for review and approval by the Orange County Sheriff's Department to ensure that it is designed in accordance with all applicable requirements of the OCSD, including but not limited to parking, security, lighting, and access.

5.10 Fire Protection

Fire protection services and facilities in unincorporated Orange County and within Coto de Caza are provided by the Orange County Fire Authority (OCFA). Fire protection service is essential to the safety of the residents in the County, especially with the threat of wildfires. Services provided by the OCFA include structural fire protection, emergency medical and rescue services, hazardous inspections and (emergency) response, and public education activities. OCFA also participates in disaster planning as it relates to emergency operations, which includes high occupant areas and school sites; and the agency may participate in community disaster drills planned by others. Fire Station No. 40, which is operated and maintained by OCFD, is located at 25082 Vista del Verde in Coto de Caza.

Project implementation will result in the intensification of development within the area, which is characterized by the construction of the seven additional residential dwelling units. Although project implementation is consistent with the intensity of development permitted in the Coto de Caza Specific Plan, development is proposed to occur outside of the development footprint approved for Planning Area 10. As a result, development of the site as proposed will increase the demands for (structural) fire protection and paramedic services and, therefore, affect the ability of the OCFA to provide an adequate level of service because the subject property is located within an high fire hazard area.

Although the proposed project is consistent with the density allocation for Planning Area 10, an amendment to the Coto de Caza Specific Plan is required to reflect development beyond the originally approved development footprint and to address unique site design and development features associated with the proposed project. In order to continue to provide an adequate level of fire protection service within Coto de Caza, the OCFA typically enters into a Secured Fire Protection Agreement with private developers (refer to SC 5.10-16) whose development projects impact the ability of that agency to provide emergency and fire protection services at the adopted service levels. Project implementation will not require the construction of a new fire station. Nonetheless, a developer is required to mitigate the project's incremental impact to fire protection facilities and service by providing a *pro rata* fair share funding for capital improvements and infrastructure costs. With the payment of the fair share fees in accordance with the Secured Fire Protection Agreement, project-related emergency-response and related impacts on fire protection facilities and service associated with the development of the site as proposed would be reduced to a less than significant level.

In addition to the potential impacts identified above related to the potential impacts to existing facilities, equipment and manpower levels that affect response times, project implementation could have a potential adverse effect on effectiveness of the ability of firefighting equipment and personnel to access the site and provide combat fires and related emergencies on the site. Without adequate access, both to the site and to each of the proposed structures, firefighting and related emergency activities could be hampered. In order to

ensure that adequate access is provided to the site and proposed structures, the applicant will be required to submit the site plan for review to the Orange County Fire Authority (refer to SC 5.10-1). Additional standard conditions have also been prescribed by the OCFA to ensure that potential project-related impacts are avoided.

As previously indicated, the subject property is located within a high fire hazard area as designated by the County of Orange. As such, the proposed residential development would be subject to wildland fires. Although the subject property is located within a 5-minute response time from Fire Station No. 40, the project must include a fuel modification plan to address the potential for wildland fire. The minimum width of a fuel modification plan is 170 feet, including a 20-foot setback zone (Zone A), a minimum 50-foot irrigated zone (Zone B), and an additional 100-foot minimum of vegetation thinning zones (Zones C and D). The conceptual fuel modification plans must be prepared and submitted to the OCFA for review and approval. Only plant species identified in Attachment 8 of the "Guideline for Fuel Modification Plans and Maintenance Program" prepared by the OCFA are permitted within the fuel modification plan, unless alternative plant species are approved by that agency.

The proposed project will be subject to the following standard conditions prescribed by the OCFA:

SC 5.10-1 Prior to the issuance of any grading or building permits, the project plans shall be subject to review and approval by the Orange County Fire Authority for compliance with all applicable OCFA standard conditions, including those for access, water supply and pressure, built-in fire protection systems, road grades and width, building materials, etc.

SC 5.10-2 Prior to the issuance of a grading permit, the developer shall have completed implementation of that portion of the approved fuel modification plan determined to be necessary by the OCFA before the introduction of any combustible materials into the project area. Approval shall be subject to an on-site inspection by OCFA.

SC 5.10-3 Prior to the issuance of any building permits, the applicant shall obtain approval of the Fire Chief for all fire protection access roads to within 150 feet of all portions of the exterior of every structure on site. The plans shall include plan and sectional views and indicate the grade and width of the access road measured flow-line to flow-line. When a dead-end street exceeds 150 feet or when otherwise required, a clearly marked fire apparatus access turnaround must be provided and approved by the Fire Chief.

SC 5.10-4 Prior to the issuance of a building permit for combustible construction, the builder shall submit a letter on company letterhead stating that water for fire-fighting purposes and all-weather fire protection access roads shall be in place and operational before any combustible material is placed on site. Building permits will not be issued without OCFA approval obtained as a result of an on-site inspection.

SC 5.10.5 Prior to the issuance of any building permits, the applicant shall submit a fire hydrant location plan to the Fire Chief for review and approval.

SC 5.10-6 Prior to the issuance of any certificate of occupancy, all fire hydrants shall have a blue reflective pavement marker indicating the hydrant location on the street as approved by the Fire Chief, and must be maintained in good condition by the property owner.

SC 5.10-7 Prior to the issuance of any building permits, the applicant shall submit plans and obtain approval from the Fire Chief for fire lanes on required fire access roads less

than 28 feet in width. The plans shall indicate the locations of red curbs and signage and include a detail of the proposed signage, including height, stroke and colors of the lettering and its contrasting background.

SC 5.10-8 Prior to the issuance of any certificate of occupancy, the fire lanes shall be installed in accordance with the approved fire master plan. The CC&Rs or other approved documents shall contain a fire lane map, provisions prohibiting parking in the fire lanes, and a method of enforcement.

SC 5.10-9 Prior to the issuance of any building permits, if applicable, the applicant shall obtain the approval from the Fire Chief for the construction of any gate across required fire department access roads.

SC 5.10-10 Prior to the issuance of any building permits, the applicant shall provide evidence of adequate fire flow. The "Orange County Fire Authority Water Availability for Fire Protection" form shall be signed by the applicable water district and submitted to the Fire Chief for approval. If sufficient water to meet fire flow requirements is not available, an automatic fire extinguishing system may be required in each structure affected.

SC 5.10-11 Prior to the issuance of a building permit, a note shall be placed on the fire master plan stating that all structures exceeding 5,500 square feet (per amendment) and all structures exceeding fire department access requirements shall be protected by an automatic fire sprinkler system in a manner meeting the approval of the Fire Chief.

SC 5.10-12 Prior to the issuance of a building permit, the applicant shall submit plans for any required automatic fire sprinkler system in any structure to the Fire Chief for review and approval. Prior to the issuance of a certificate of occupancy, this system shall be operations in a manner meeting the approval of the Fire Chief.

SC 5.10-13 A supervised fire alarm system that complies with the requirements of the California Fire Code shall be included in the project design in an accessible location with an annunciator.

SC 5.10-14 Access to and around structures shall meet OCFA and California Fire Code requirements.

5.11 Schools

The project site is located in the northernmost portion of the Capistrano Unified School District (CUSD). Project implementation includes the development of seven (7) single-family residential dwelling units. EIR 401 also quantified the number of school-age children that would be generated within the Saddleback Unified School District by the ultimate development of the Coto de Caza Specific Plan, including the seven dwelling units proposed in TTM 17325. The applicant will be required to pay the development fees in effect prior to issuance of building permits. Payment of the development fees will offset the addition of school-age children within the district. No significant impacts are anticipated and no mitigation measures are required.

5.12 Parks and Recreation

Project implementation includes the development of only seven single-family residential lots within the approximately 127-acre property. Public and private park and recreational facilities exist throughout the Coto de Caza community and include both active and passive recreation. The project will not be required to include recreational facilities; however, the project will be subject to the County's Quimby Act fees (i.e., Local Park Code) prior to the issuance of building permits for the homes. As a result, no significant impacts are anticipated and no mitigation measures are required.

5.13 Traffic and Circulation

Project implementation will require the extension of an access road from Van Gogh Way into the proposed project site to serve the seven single-family residential dwelling units. The proposed project will result in the generation of about 70 trips per day, including about 7 p.m. peak hour trips on a daily basis. Project-related traffic would enter and exit the proposed residential development from the access road via Van Gogh Way and Vista Del Verde. The number of vehicular trips generated by the proposed project were previously included in the total 58,450 residential trips generated by the Coto de Caza project in Final EIR 401. Virtually all of the circulation improvements determined to be necessary to accommodate the Coto de Caza development have been implemented.

Based on a typical trip generation rate of 10 trips/dwelling unit, the proposed project would generate a total of only 70 daily vehicular trips, including approximately 10 a.m. peak hour trips and 10 p.m. peak hour trips. The estimated 70 potential project-related vehicular trips are less than that analyzed the traffic analysis prepared for the Coto de Caza Specific Plan; therefore, project implementation will not exceed the trip generation anticipated for Planning Area 10. The number of trips anticipated as a result of project implementation will not conflict with the County's Congestion Management Program and will not adversely affect existing intersections along the existing circulation system serving the project site. In addition, adequate vehicular access is provided to the seven proposed residential lots with the extension of the street from Van Gogh Way. This access road will also provide adequate emergency access. Access to the project will be designed to the standards prescribed in the Coto de Caza Specific Plan, which would avoid potential roadway/circulation hazards. Finally, parking will also be provided in accordance with parking standards established in the Coto de Caza Specific Plan. As a result, no significant traffic and circulation or parking impacts are anticipated as a result of project implementation. No mitigation measures are required.

5.14 Utilities and Service Systems

The project applicant has prepared a preliminary Master Development Plan for water and sewer, which has been submitted to the Santa Margarita Water District (SMWD) for review and approval for issuance of a "will serve" letter from that provider. The information presented below provides a summary of the Master Development Plan.

Sewer Facilities and Service

Sewer service to the subject property is provided by the SMWD. At the present time, the SMWD owns and maintains an 8-inch sewer main in Van Gogh Way, adjacent to the subject property. Based on a generation rate of 105 gallons per day (gpd), the maximum day sewage generation for the seven dwelling units is estimated to be 2,940 gpd; the peak day generation would be 7,350, based on a peak demand factor of 2.5. The peak day generation of 7,350 gpd equates to 5.1 gallons per minute (gpm), which is 0.01 cubic feet per second (cfs).

The project proposes to construct an 8-inch sewer line within Street A, which will be public and will gravity drain to the existing 8-inch sewer main in Van Gogh Way in Tract 15245. The gravity line will serve lots 1

through 5; lots 6 and 7 are proposed to be served by an 8-inch main that would drain to the southerly end of the proposed bridge crossing. From that location, the sewage would be picked up in a sewer lift station (i.e., pump grinder) and discharged into a 4-inch force main that will extend northerly in Street "B" to the proposed 8-inch gravity sewer line in Street "A". The homeowners' association will own and maintain the sewer line in Street "B". Potential impacts to biological resources are those associated with the extension of the roadways and grading for the building sites included in the analysis presented in Section 4.3 (Biological Resources). No other significant impacts would be anticipated as a result of the extension of the sewer facilities.

Water Service and Facilities

Water service to the project site is also provided by the SMWD. At the present time, SMWD owns and maintains a 6-inch water main in Van Gogh Way. Peak water flows have been developed for the project based on the fire flow demand of 1,500 gallons per minute (gpm). Based on that demand, the average day demand is estimated to be 800 gallons per day per dwelling unit. Based on a peak hour "peaking" factor of 3.5, the proposed project would require 19,600 gallons of water per day or approximately 14 gpm. As a result, the proposed project would have a maximum peak flow requirement of 1,514 gpm.

The proposed water design for the project involves the construction of a 12-inch water main within both Streets "A" and "B", with fire hydrants spaced at a maximum of 600 feet on center (in accordance with OCFA requirements for sprinklered structures) and at street intersections. The proposed 12-ionch water line would tap into the existing 6-inch facility in Van Gogh Way within Tract 15245. The 12-inch water mains would dead-end at both of the two proposed cul-de-sacs. SMWD standards require static pressure at each proposed single-family water meter to be a minimum of 50 psi. In order to provide the home sites with adequate pressure, two alternatives may be implemented, including: (1) installation of individual booster pumps in lots 1 through 5; lots 6 and 7 would have adequate pressure (i.e., approximately 60 psi); and (2) install a booster pump station at approximately elevation 735, which would increase the pressure by about 25 psi to provide the minimum 50 psi for lots 1 through 5 and pressure above 80 psi for lots 6 and seven (which may necessitate pressure regulators). As indicated above, potential impacts to biological resources associated with the extension of the water facilities are similar to the sewer facilities impacts, which were addressed in Section 4.3 related to the extension of the circulation improvements and grading for the individual building sites. No other significant impacts would be anticipated as a result of the extension of the water facilities. In order to ensure that the SMWD has adequate capacity and supplies to serve the proposed 7-unit subdivision shall comply with the following condition:

SC 5.14-1 Prior to consideration of the proposed project by the Orange County Planning Commission and/or Orange County Board of Supervisors, the applicant shall submit evidence to the County from the Santa Margarita Water District documenting that the District has adequate long-term domestic water supplies that are adequate to serve the proposed 7-unit residential subdivision and has made an irrevocable commitment to provide them.